

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
MARTIN FESSENMAIER
RUTAN & TUCKER, LLP
611 ANTON BLVD., SUITE 1400
COSTA MESA, CA 92626

PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year) 09 AUG 2006

Applicant's or agent's file reference

325.0206PCT

IMPORTANT NOTIFICATION

International application No.

PCT/US04/08350

International filing date (day/month/year)

17 March 2004 (17.03.2004)

Priority date (day/month/year)

Applicant

FLUOR TECHNOLOGIES CORPORATIONS

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/ US

Mail Stop PCT, Attn: IPEA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (571) 273-3201

Authorized officer

Glenn Calderola
Telephone No. (703) 308-0661

Form PCT/IPEA/416 (January 2004)

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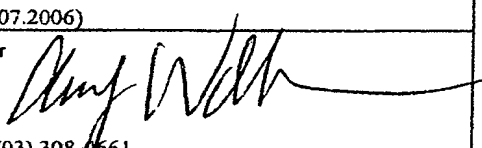
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 325.0206PCT	FOR FURTHER ACTION	See Form PCT/IPEA/416																								
International application No. PCT/US04/08350	International filing date (day/month/year) 17 March 2004 (17.03.2004)	Priority date (day/month/year)																								
International Patent Classification (IPC) or national classification and IPC IPC: Please See Continuation Sheet USPC: 202/242,211,266,253,252,227,239,242,244,245;201/31,41																										
Applicant FLUOR TECHNOLOGIES CORPORATION																										
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of ___ sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																										
<p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>			<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand 14 December 2005 (14.12.2005)	Date of completion of this report 11 July 2006 (11.07.2006)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Glenn Calderola  Telephone No. (703) 308-6661																									

Form PCT/IPEA/409 (cover sheet)(April 2005)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/08350

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☒ the description:
- pages 1-6 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the claims:
- pages 7 and 8 as originally filed/furnished
- pages* NONE as amended (together with any statement) under Article 19
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the drawings:
- pages 1 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages none
- ☒ the claims, Nos. none
- ☒ the drawings, sheets/figs none
- ☒ the sequence listing (*specify*): none
- ☒ any table(s) related to the sequence listing (*specify*): none

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Form PCT/IPEA/409 (Box No. I) (April 2005)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/08350**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>2,3,6,9-12,15-17</u>	YES
	Claims <u>1,4,5,7,8,13,14</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-17</u>	NO
Industrial Applicability (IA)	Claims <u>1-17</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)
Please See Continuation Sheet

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Continuation of IPC:

C10B 25/00(2006.01),9/00(2006.01),7/14(2006.01),39/00(2006.01)

V. 2. Citations and Explanations:

1. Claims 1 and 7 lack novelty under PCT Article 33(2) as being anticipated by US 6,808,602 to Schonfeld et al.

With respect to claim 1, 6,808,602 to Schonfeld teaches a coke drum having a body portion (32) and a bottom outlet flange (36). A bottom head (defined by 34,35) can be removed and reintegrated with the cokedrum by employing a head removal system (Fig.1A) that inherently aligns the bottom head and coke drum on removal or reintegration.

With respect to claim 7, Schonfeld et al teaches that the lifting device apparatus comprises a winch (50).

2. Claims 1,4,5,8,13 and 14 lack novelty under PCT Article 33(2) as being anticipated by US 6,808,602 to Schonfeld et al.

With respect to claim 1, US 5,581,864 to Rabet teaches a coke drum having a body portion (13) and a bottom outlet flange (27). A bottom head (defined by 26,34) can be removed and reintegrated with the cokedrum by employing a head removal system (Fig.9) that inherently aligns the bottom head and coke drum on removal or reintegration.

With respect to claim 4, Rabet teaches that the lifting device comprises a piston (20c).

With respect to claim 5, Rabet teaches that the lifting device apparatus comprises a hydraulic piston (20c).

With respect to claim 8, Rabet teaches that the lifting device apparatus comprises a scissors (30).

With respect to claim 13, The method of claim 1, further comprising lifting the valve using a secondary lifting device comprising a spring hanger (14).

With respect to claim 14, Rabet teaches providing the valve with an inlet (35) having a size that approximates an outlet of the body.

3. Claims 2,3,6,9-12,15-17 lack an inventive step under PCT Article 33(3) as being obvious over US 5,581,864 to Rabet. With respect to claims 2,3 and 16, while Rabet does not teach installing both the coke drum and the valve within two months of each other or installing the valve more than one month after installing the coke drum. However, one of ordinary skill would have installed a coke drum and valve within the claimed time frame in order to bring the coking operation online at the soonest time possible. One of ordinary skill

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Supplemental Box

would have been motivated by the desire to save money.

With respect to claim 6, Rabet does not teach that the lifting device apparatus comprises a pneumatic piston. However, a hydraulic and pneumatic piston are equivalently suitable for the purpose of providing a lifting motion. Therefore, it would have been a routine matter of engineering choice to have used pneumatic rather than hydraulic pistons.

With respect to claim 9, Rabet does not teach that the lifting device apparatus comprises a screw jack. However, a screw jack is an art recognized equivalent to a hydraulic cylinder for the purpose of lifting something. As a result, it would have been an obvious matter of design choice to have used a screw jack instead of a hydraulic cylinder as disclosed by Rabet.

With respect to claims 10-12, while Rabet does not teach that the lifting device raising the valve at least 2 cm, 20 and 40 cm, it would have been an obvious matter of engineering choice to have positioned the lifting device under the coke drum such that sufficient headroom is afforded to the lifting device.

With respect to claim 15, Rabet teaches that the lifting device comprises at least one of a piston (20c), winch scissors, and screwjacks, that lift the valve at least 20cm. While Rabet does not teach that the lifting device raising the valve at least 20 cm, it would have been an obvious matter of engineering choice to have positioned the lifting device under the coke drum such that sufficient headroom is afforded to the lifting device.

With respect to claim 17, Rabet does not teach installing an oil inlet in a side wall of the drum above the flange. However, it is well established in the coke drum art that oil can be introduced into a coking drum by situating the oil inlet in a sidewall of the coke drum. Accordingly it would have been a routine matter of engineering choice to have provided the coke drum of Rabet with an inlet in a side wall of the drum above the flange.

----- NEW CITATIONS -----